

## **Appendix- apèndix**

# **Sonic Researches- Recerca Sònica**

## **From sound to form / From form to sound**

Researches and experiments on the relationship between Sound and Form, Form and Sound, Sound and Space, Sound and Body, Sound Interaction Design, Data Translation, Sonifications, Vibrational States, Immersive Spaces.

---

Links of researches related on the next areas :

**Sonification**

**Sonic Interaction Design**

**Perception**

**Audio Algorhythmics // Creative Programming**

**Immersivity**

**Sonology**

**Data Translations**

**Spatial Music**

**Music Aided Design**

**Interactive Installations**

### ***-Sonification***

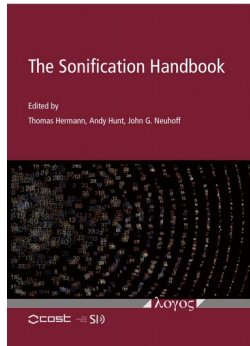
Sonification is the use of nonspeech audio to convey information. More specifically, sonification is the transformation of data relations into perceived relations in an acoustic signal for the purposes of facilitating communication or interpretation.

La sonicació és l'ús d'àudio no de veu per transmetre informació. Més específicament, sonicació és la transformació de les relacions de dades en les relacions percebudes en un senyal acústic a per facilitar la comunicació o interpretació.

<http://sonification.de/son/definition>

## ***Llibres / Revistes / Books / Journals:***

### **-The Sonification Handbook**



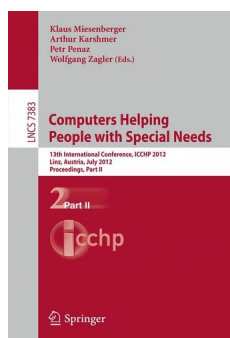
<http://sonification.de/handbook/>

### **-International Journal of Human-Computer Studies Special Issue on Data sonification and sound design in interactive systems**

Disseny de so és el procés de creació de nous sons funcionals i significatives per als objectes o sistemes. Sonificació és un tipus particular de disseny de so que té per objecte representar els conjunts de dades amb el so.

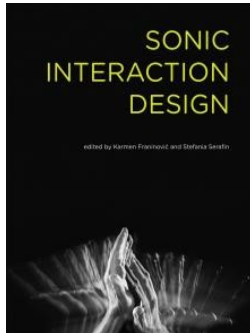
<http://www.journals.elsevier.com/international-journal-of-human-computer-studies/call-for-papers/special-issue-on-data-sonification-and-sound-design-in-inter/>

### **-Hapto acoustic Scene representation**



[http://link.springer.com/chapter/10.1007/978-3-642-31534-3\\_94#page-2](http://link.springer.com/chapter/10.1007/978-3-642-31534-3_94#page-2)

### **-Sonic Interaction Design**



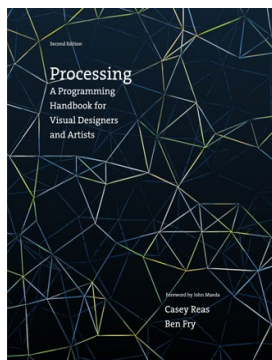
<https://mitpress.mit.edu/index.php?q=books/sonic-interaction-design>

## **-Code writing**



[https://archive.org/details/10\\_PRINT\\_121114](https://archive.org/details/10_PRINT_121114)

## **-Processing: A Programming Handbook for Visual Designers and Artists**



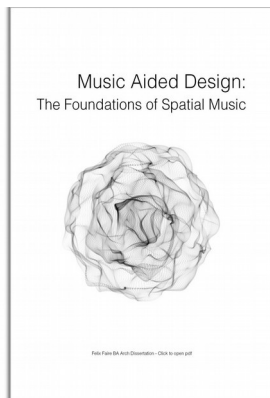
<https://processing.org/handbook/>

## **-Music Aided Design:**

# **The Foundations of Spatial Music**

Immersivity // Haptics // Space // Sonic Interaction Design

Synaestheticspace



<http://www.synaestheticspace.com/felixfauredissertation.pdf>

## **-Experimental Practices and Subversion in Sound**

[http://cec.sonus.ca/econtact/16\\_4/](http://cec.sonus.ca/econtact/16_4/)

## **-Hapto acoustic interaction**

Realitat virtual

<http://cdn.intechopen.com/pdfs-wm/12762.pdf>

## ***Sonification Centers:***

### **-GT Sonification Lab (Georgia Tech school of psychology)**

<http://sonify.psych.gatech.edu/research/#informallearning>

### **-International Conference on Auditory Display 2015 Graz**

Institut per musica electrònica– IEM

<http://iem.kug.ac.at/icad15/icad15/about.html>

## **-Center for new music and audio technologies**

Research Director Adrian Freed

[http://cnmat.berkeley.edu/people/adrian\\_freed](http://cnmat.berkeley.edu/people/adrian_freed)

### ***Exhibitions, Installations and Experiments:***

## **-Andrei Branea - Experimental Electroacoustic Music**

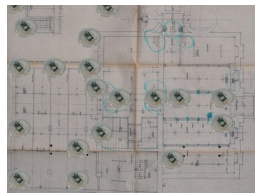


<http://www.andreibranea.com/Devised-Project-CMT-2012-13>

[https://www.pinterest.com/search/pins/?q=sonifications&rs=rs&term\\_meta\[\]=sonifications|recentsearch|2](https://www.pinterest.com/search/pins/?q=sonifications&rs=rs&term_meta[]=sonifications|recentsearch|2)

## **-Sonicity: Songs Of Atoms Time And Space**

Una sonificación del espai real i del seu entorn. Dades como so, espai com so, Galería com so.



<https://www.behance.net/gallery/Sonicity-By-Stanza/5259039>

## **Interactive Installations/Sonification**

## **-Behnaz Farahi**



<http://www.interactivearchitecture.org/behnaz-farahi.html>

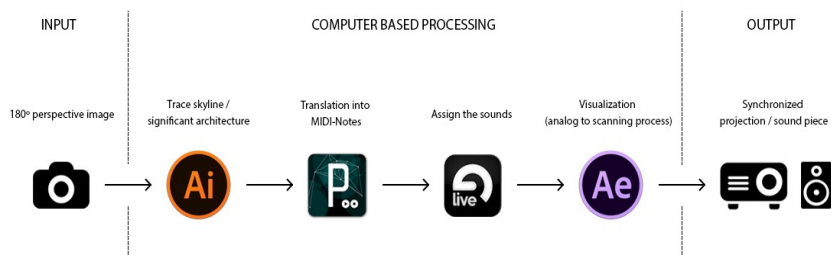
## -Sonification of San Giovanni Elemosinario (Venice, Italy)



<http://www.interactivearchitecture.org/behnaz-farahi.html>

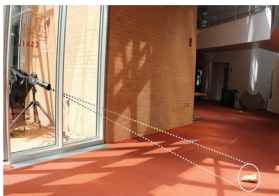
[http://jpbellona.com/public/writing/BellonaJon\\_SanGiovanni.pdf](http://jpbellona.com/public/writing/BellonaJon_SanGiovanni.pdf)

## -SKYLINE TRANSCRIPT Architectural Sonification



[http://niklas-isselburg.com/project-skyline\\_transcript.php](http://niklas-isselburg.com/project-skyline_transcript.php)

## -Abe Davis: New video technology that reveals an object's hidden properties



<https://www.youtube.com/watch?v=npNYP2vzaPo>

<http://www.abedavis.com/index.html>

## -4D sound



<http://4dsound.net/>

[http://4dsound.net/system\\_control/](http://4dsound.net/system_control/)

<http://createdigitalmusic.com/2014/09/spatial-audio-explained-4dsound-system-change-hear-videos/> <https://liine.net/en/products/lemur> / <https://www.ableton.com/en/blog/4dsound-video-performance-stimming/>

## -Microsonic Landscape

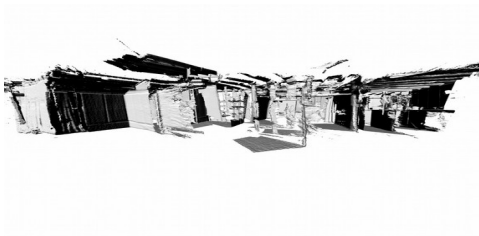


<http://www.binarynode.net/microsonic/faq.html>

<http://www.binarynode.net/microsonic/algorithm.html>

## -Harmonious: Architectural Structure and BioBeauty

Harmoniós és un projecte concebut al voltant de la naturalesa dels senyals de traducció i de la seva naturalesa inherent d'existir en 2D en un món de 3D. Sonificació de la casa Schindler:



<https://vimeo.com/40199599>

<http://www.socinematic.com/>

## **-An Instrument for the Sonification of Everyday Things**



<http://dennisppaul.de/an-instrument-for-the-sonification-of-everyday-things/>

## **-Building Materials**

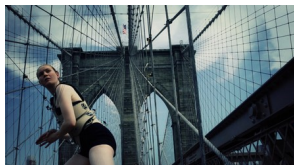


<https://cycling74.com/project/building-materials/>

<http://www.repeat-to-fade.net/storage/BMInfo.pdf>

## **The *Human Harp* Turns Bridges Into Musical Instruments**

Gestures // SoundArt // Body // Haptical



<http://motherboard.vice.com/read/how-were-sonifying-the-city>

<http://thecreatorsproject.vice.com/blog/brooklyn-bridge-musical-instrument-human-harp-di-mainstone>

## **-The Crushing Din of Vibrating Buildings:**

Arquitectura resonant



<http://thecreatorsproject.vice.com/blog/the-crushing-din-of-vibrating-buildings>

<http://resonantarchitecture.com/>



## **-Supporting Blind Navigation using Depth Sensing and Sonification**

<http://ubicomp.org/ubicomp2013/adjunct/adjunct/p255.pdf>

## **-What is IanniX?**

IanniX, A graphical open source sequencer

### **01. Mille Plateaux**



<http://www.iannix.org/en/projects/>

## **-Artists Turn Songs into 3D-Printed Sculptures**

Data Translations // Sonic Sculptures



<http://thecreatorsproject.vice.com/blog/artists-turn-songs-into-3d-printed-sculptures>

<http://www.reify.nyc/>

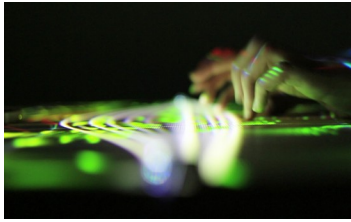
## **-Sound Sculptures Make Music Something You Can See, Hear, and Hold**



[http://thecreatorsproject.vice.com/blog/3d-printed-music-sculptures-are-the-futures-vinyl?utm\\_source=tcptwitterus](http://thecreatorsproject.vice.com/blog/3d-printed-music-sculptures-are-the-futures-vinyl?utm_source=tcptwitterus)

## **-CONTACT: Augmented Acoustics**

Haptical Devices // AR // Gestures // Música Electrònica



<http://felixfaire.com/portfolio/contact/>

## **-Colour Chaser**



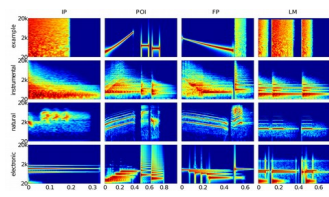
<http://yurisuzuki.com/works/colour-chaser/>

## **-Peter Sinclair: Inside Zeno's Arrow: Mobile Captation and Sonification**



<http://wi.mobilities.ca/peter-sinclair-inside-zenos-arrow-mobile-captation-and-sonification/>

## **-Gaëtan Parseihian, Sølvi Ystad, Mitsuko Aramaki, Richard Kronland Martinet: The -process of sonification design for guidance tasks**



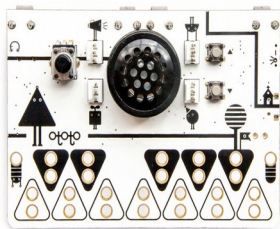
<http://wi.mobilities.ca/gaetan-parseihian-the-process-of-sonification-design-for-guidance-tasks/>

**-I am thinking in a room different from the one you are hearing in now (homage to Alvin Lucier)**



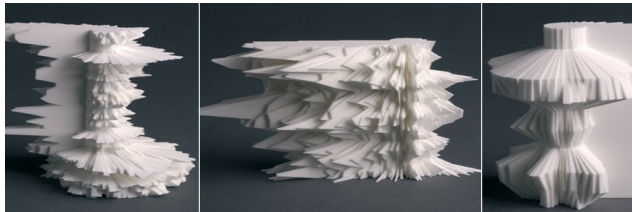
<https://vimeo.com/27901896>

**-Meet Ototo**



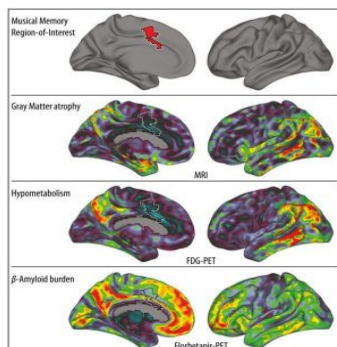
<http://www.ototo.fm/products>

**-Sound Sculptures: Rendering Sounds in Tangible Forms**



[http://infosthetics.com/archives/2009/11/tangible\\_sounds.html](http://infosthetics.com/archives/2009/11/tangible_sounds.html)

**-El alzhéimer no puede con la música**

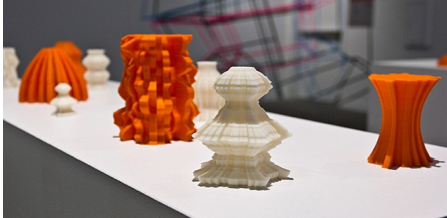


[http://elpais.com/elpais/2015/06/23/ciencia/1435064927\\_042235.html](http://elpais.com/elpais/2015/06/23/ciencia/1435064927_042235.html)<http://www.mpg.de/9281090/alzheimers-long-term-musical-memory>

**-high-tech sound sculptures**

**-Art from code - Generator.x**

## **Generator.x 3.0: From Code to Atoms**



<http://www.generatorx.no/20111222/generator-x-3-0-from-code-to-atoms/>

<http://mariuswatz.com/>

<http://mariuswatz.com/category/curating/>

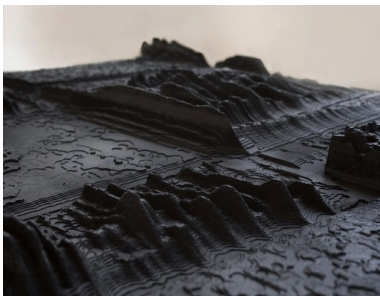
<http://www.generatorx.no/20080229/generatorx-20-update-2/>

<http://www.generatorx.no/>

**-a hub to share projects and know-how  
exchanged at iMAL**

<http://wiki.imal.org/>

## **-Reflection II**



<http://anf.nu/reflection-ii/>

<http://www.laboralcentrodearte.org/es/recursos/obras/reflection-ii>

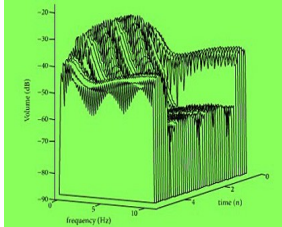
**-laser-cut sound analysis sculptures**



[http://infosthetics.com/archives/2008/07/lasercut\\_sound\\_analysis\\_sculptures.html](http://infosthetics.com/archives/2008/07/lasercut_sound_analysis_sculptures.html)

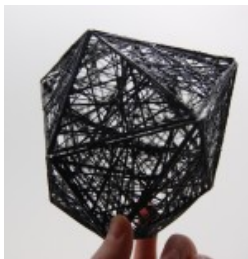
## -Sound/Chair

**Data Translations // Data sculptures // Sonic Sculptures** A sound that when plotted on a volume, frequency time graph resembles a chair.



<http://www.plummerfernandez.com/Sound-Chair>

## -Encoded Matter

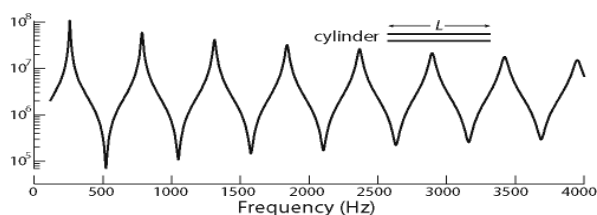


<http://introspector.be/encoded-matter/>

<https://www.flickr.com/photos/introspector/sets/72157629429956661/with/6779647058/>

## -Sonology // Acoustics

What is acoustic impedance and why is it important?



<http://newt.phys.unsw.edu.au/jw/z.html>

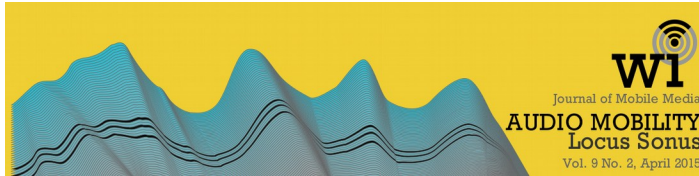
## -Echolocation // Sonic Space // Sonic Aided Blindness



<http://wi.mobilities.ca/aissen-carro-chacin-echolocation-headphones-seeing-space-with-sound/>

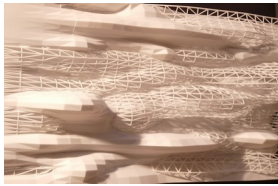
## **-WI // Audio Mobility // Locus Sonus**

Journal of mobile media



<http://wi.mobilities.ca/>

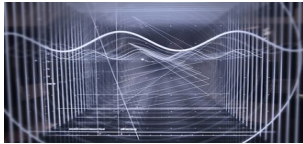
## **-This Machine Turns Your Mental Map Into An Architectural Structure**



Neuro Sciences // Data Translations // Body // Structures

<http://thecreatorsproject.vice.com/blog/this-machine-turns-your-mental-map-into-an-architectural-structure>

## **-Data Visualization // Synesthesia**



[http://thecreatorsproject.vice.com/blog/the-science-of-sound-gets-visualized-in-this-av-experiment?utm\\_source=tcptwitterus](http://thecreatorsproject.vice.com/blog/the-science-of-sound-gets-visualized-in-this-av-experiment?utm_source=tcptwitterus)

## **-Data-Driven DJ**

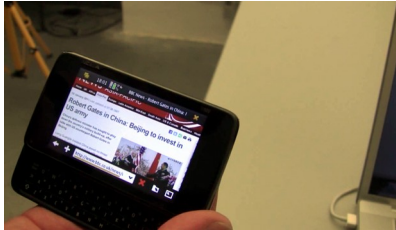
Data Translations / Sonifications /

Data-Driven DJ is a series of music experiments that combine data, algorithms, and borrowed sounds.



<https://datadrivendj.com/>

## **-Julian Oliver -Critical engineering**



<https://vimeo.com/52962142>

## **-Newstweek : device for manipulating news read by other people on wireless hotspots**



<http://newstweek.com/overview>

## **-CLOUDS: Pittsburgh Premiere**

Clouds is a visually groundbreaking interactive and generative documentary that allows the viewer to explore creativity through the language of code.

<https://vimeo.com/90879514>



## -The Visual Language Survey

Sound sculptures



<http://reifynyc.tumblr.com/archive>

## -Here's How You Turn Sounds Into 3D Sculptures



<http://thecreatorsproject.vice.com/blog/heres-how-you-turn-sounds-into-3d-sculptures>

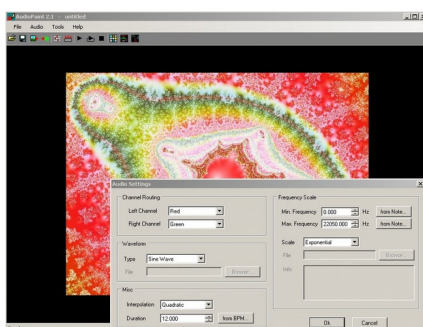
## -La música de las imágenes

Mapeo MIDI

<http://i2sm.softonic.com/>

## -Traducir imagen a sonido

Audiopaint:





<http://www.jcvasquez.com/tutoriales/traducir-imagen-en-sonido/>

## **-Nervous Systems**



<https://n-e-r-v-o-u-s.com/tools/>

<https://n-e-r-v-o-u-s.com/cellCycle/>

## **-The New Museum's Sonic Installation Makes You The Musician**



<http://www.fastcodesign.com/3049558/the-new-museums-sonic-installation-makes-you-the-musician#6>

## **-Fine Collection of Curious Sound Objects**



<http://www.pixelsumo.com/post/curious-sound-objects>

## **-Sonophore (2011)**

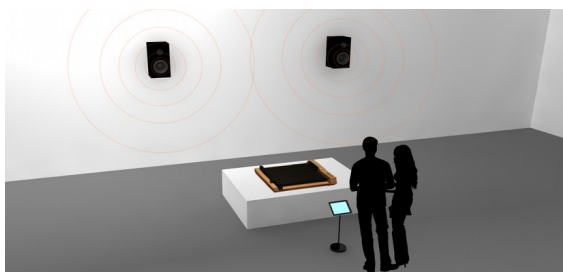


Signal to noise : <http://www.signal-to-noise.co.uk/portfolio/sonophore/>

## **-Analogue tape glove**



<http://www.signal-to-noise.co.uk/portfolio/analogue-tape-glove/>

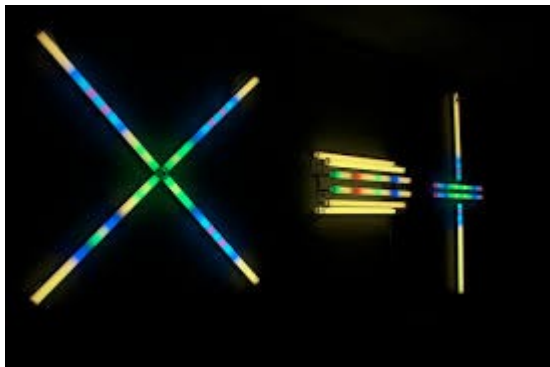


## **-REMAP: Roland Electro-Mechanical Audio Plotter**



<http://www.signal-to-noise.co.uk/portfolio/remap/>

## **-Xepa Philip Galanter**



<http://philipgalanter.com/art/xepa/images/>

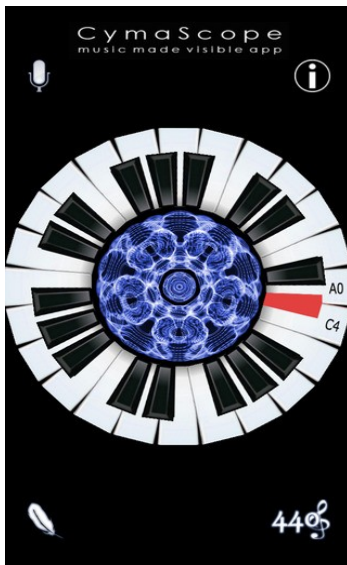
## **-This Tube Gives The Hearing Impaired An Alternative Way To Experience Music**

Vi is a music device for children with hearing impairment that allows them to experience music in a way which is both tactile and visual.



<http://www.fastcodesign.com/3049718/this-tube-gives-the-hearing-impaired-an-alternative-way-to-experience-music>

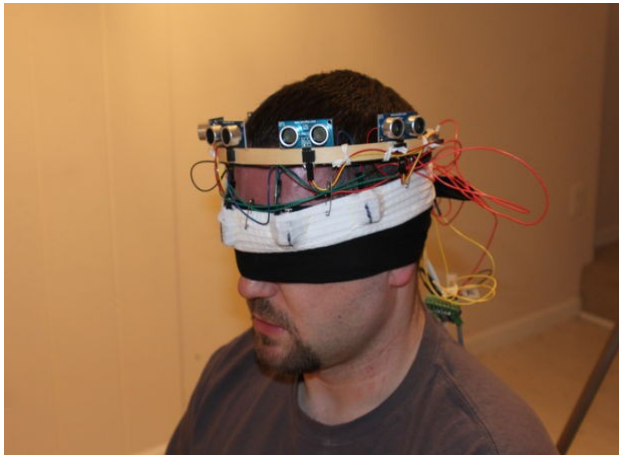
## -CymaScope - Music Made Visible



[http://www.cymascope.com/cyma\\_research/cyma\\_app.html](http://www.cymascope.com/cyma_research/cyma_app.html)

<http://cymatica.com/2015/08/17/new-cymatic-app-lets-you-see-cymatics-on-your-iphone/>

## **-Haptic Feedback device for the Visually Impaired [Project HALO]**



<http://www.instructables.com/id/Haptic-Feedback-device-for-the-Visually-Impaired/>

## **-Generative Music and procedural sound design for Sim cells**



<http://soundstudiesblog.com/2014/05/>

<https://www.youtube.com/watch?v=0xr4aL1C24E&feature=youtu.be>

## **-Physical Representation of Sound**



<http://www.instructables.com/id/Physical-Representation-of-Sound/#step1>

## **-Immaterials - data between visibility and invisibilit**

Immaterials – the form of meta data



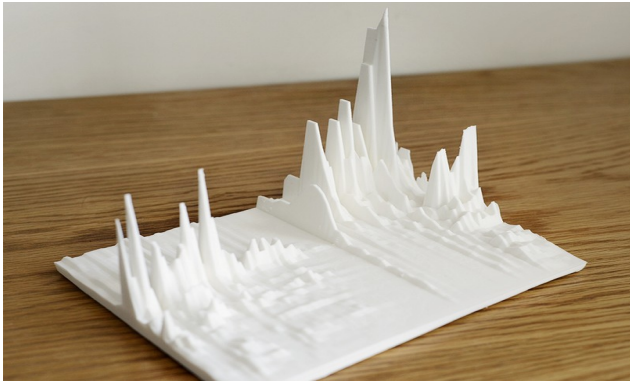
<http://www.onformative.com/work/immaterials/>



<https://vimeo.com/8814806>

## **-3DP – SOUNDWAVE**

Visualización sonido mediante Processing



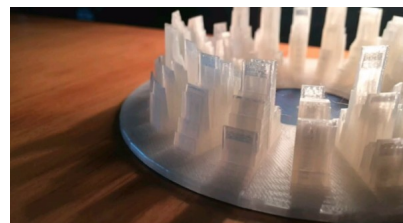
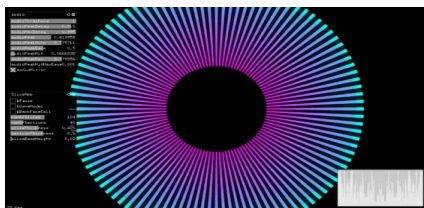
<http://gracefulspoon.com/blog/tag/processing/>

## **-holodecks {sound sculptures}**



<http://www.julapy.com/work/holodecks-sound-sculptures/>

## **-Visualizing active sound waves with 3D printing & augmented reality**



<http://www.3ders.org/articles/20131230-visualizing-active-sound-waves-with-3d-printing-augmented-reality.html>

## **-Procedural audio reative animation**

through Trapcode



<http://www.trapcode.com/sharelog/2013/9/21/procedural-audio-reactive-animation.html>

## **-Sound Fruit - How to Make a Sculptural Audio Visualizer**



<http://www.instructables.com/id/Sound-Fruit-How-to-Make-a-Sculptural-Audio-Visuali/?ALLSTEPS>

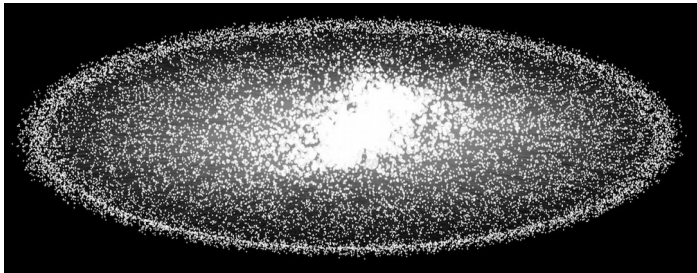


## **-Minerva – Data visualization to support the interpretation of Kant's work**



<http://www.densitydesign.org/2013/08/minerva-data-visualization-to-support-the-interpretation-of-kants-work/>

## **-Cytoscape : an open source software for visualizing complex networks**



<http://www.cytoscape.org/>

## **-GRANSHIP show window**



<http://www.designboom.com/art/onishi-yasuaki-vertical-volume-granship-japan-04-05-2014/>

## **-Numen/For Use creates 3D grid of ropes inside inflatable String Prototype installation**



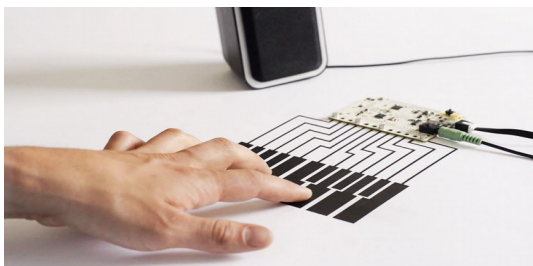
<http://www.dezeen.com/2014/02/07/string-prototype-numen-for-use-inflatable-installation-ropes/>

## **-united visual artists: momentum**



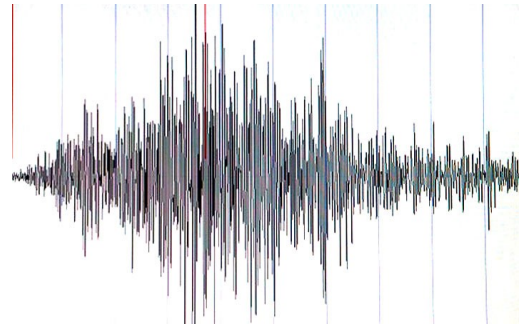
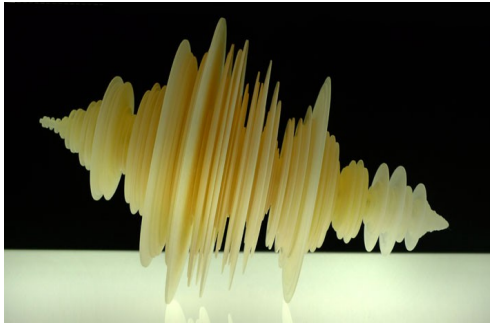
<http://www.designboom.com/art/united-visual-artists-illuminates-the-barbican-with-momentum-02-13-2014/>

## **-touch board PCB transforms tactile interaction into sound**



<http://www.designboom.com/technology/touch-board-pcb-transforms-tactile-interaction-into-sound-10-29-2013/>

## **-Tōhoku Japanese Earthquake Sculpture**



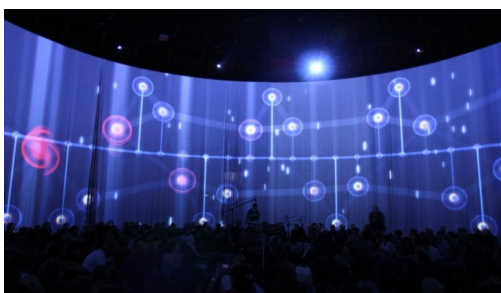
[http://www.lukejerram.com/projects/t%C5%8Dhoku\\_earthquake](http://www.lukejerram.com/projects/t%C5%8Dhoku_earthquake)

## **-love project by guto requena & D3 translates emotional data into 3D objects**



<http://www.designboom.com/design/love-project-mandalas-guto-requena-03-13-2015/>

## **-Simple Harmonic Motion [openFrameworks, Sound]**



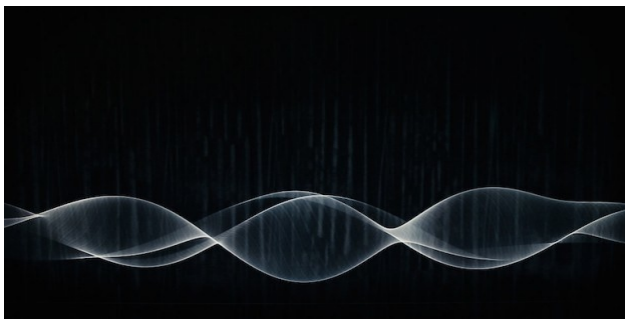
<http://www.creativeapplications.net/sound/simple-harmonic-motion-openframeworks-sound/>

## **-Rasper, Mutor and Rippler – Mechatronic sound-sculptures**



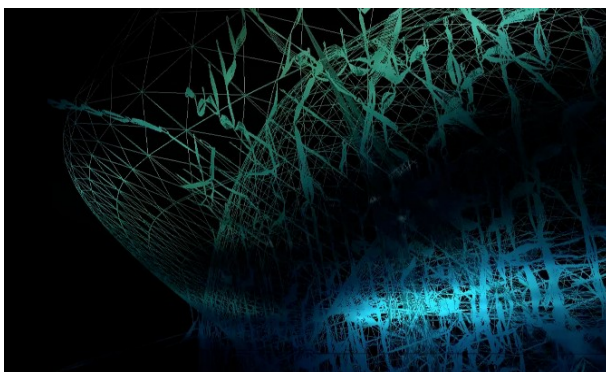
<http://www.creativeapplications.net/sound/rasper-mutor-and-rippler/>

## **-What does sound look like**



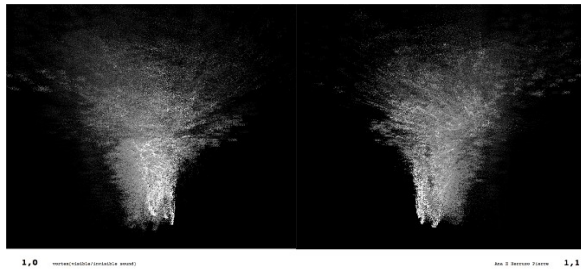
<https://es.99designs.com/designer-blog/2015/06/04/sound-visualization-design-inspiration>

## **-SOUND REACTIVE MESHES**



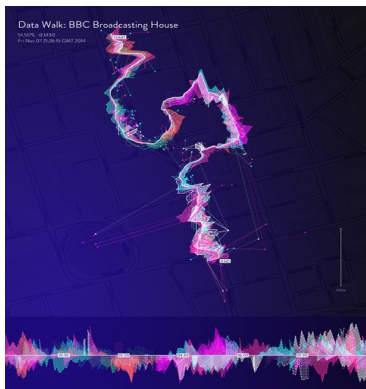
<http://herruzo-pierce.com/SOUND-REACTIVE-MESHES>

## -SONIC VORTEX



<http://herruzo-pierce.com/SONIC-VORTEX>

## -Phantom Terrains



<http://www.erase.net/projects/phantom-terrains/>

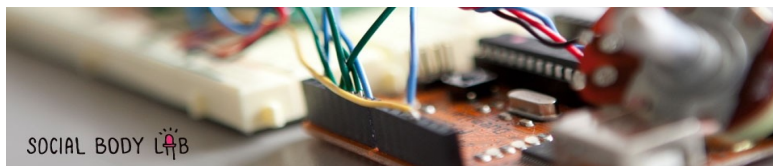
## -A Speaker for the Hearing Impaired





<http://www.coroflot.com/JacksonMcConnell/Ripple-A-Speaker-for-the-Hearing-Impaired>

## **-The Social Body Lab      Toronto Wearables Meetup**



<http://research.ocadu.ca/socialbody/home>

<http://research.ocadu.ca/socialbody/blog/toronto-wearables-meetup-31-decimal-labs-the-art-and-sole-academy>

## **-Read the Music translates sheet music into sound for visually impaired**

translates sheet music into sound for visually impaired



<http://gizmochunk.com/2067/2012/09/22/read-the-music-translates-sheet-music-into-sound-for-visually-impaired>

## **- Frozen: Sound as Space**



<https://www.tommoody.us/archives/2008/09/17/daniel-widrig-and-shajay-booshan/>